

Adrian Zielonka's Astronomy and Space News

Night Sky 2018 - December

Sunrise	Sunset	Mercury Rises	Venus Rises
1 st – 7:52am	1 st – 4:07pm	1 st – 6:59am	1 st – 4:10am
10 th – 8:03am	10 th – 4:04pm	10 th – 6:10am	10 th – 4:02am
20 th – 8:11am	20 th – 4:06pm	20 th – 6:26am	20 th – 4:03am
30 th – 8:15am	30 th – 4:13pm	30 th – 7:03am	30 th – 4:13am
Moon Rise	Moon Set	Moon Rise	Moon Set
1 st – 12:34am	1 st – 1:55pm	16 th – 1:12pm	17 th – 1:24am
2 nd – 1:50am	2 nd – 2:18pm	17 th – 1:32pm	18 th – 2:34am
3 rd – 3:04am	3 rd – 2:40pm	18 th – 1:54pm	19 th – 3:47am
4 th – 4:18am	4 th – 3:04pm	19 th – 2:19pm	20 th – 5:02am
5 th – 5:30am	5 th – 3:30pm	20 th – 2:48pm	21 st – 6:18am
6 th – 6:41am	6 th – 4:00pm	21 st – 3:26pm	22 nd – 7:33am (Full)
7 th – 7:48am (New)	7 th – 4:35pm (New)	22 nd – 4:13pm (Full)	23 rd – 8:42am
8 th – 8:49am	8 th – 5:17pm	23 rd – 5:12pm	24 th – 9:41am
9 th – 9:44am	9 th – 6:06pm	24 th – 6:23pm	25 th – 10:28am
10 th – 10:30am	10 th – 7:00pm	25 th – 7:41pm	26 th – 11:05am
11 th – 11:08am	11 th – 8:00pm	26 th – 9:01pm	27 th – 11:36am
12 th – 11:40am	12 th – 9:02pm	27 th – 10:21pm	28 th – 12:02pm
13 th – 12:07pm	13 th – 10:06pm	28 th – 11:39pm	29 th – 12:25pm (LQ)
14 th – 12:30pm	14 th – 11:11pm	30 th – 12:54am	30 th – 12:47pm
15 th – 12:52pm (FQ)	16 th – 12:17am	31 st – 2:08am	31 st – 1:10pm
A useful site: www.heavens-above.com	A S Zielonka		

There is a planned launch this month of a Chinese Long March 2D rocket from Jiuquan Satellite Launch Center, China. The Gaofen-6 remote sensing satellite will join the country's primary civilian Earth Observation infrastructure comprising a variety of differently-instrumented satellites operating from different orbits to capture a comprehensive set of land, ocean and atmospheric parameters. It carries a package of three cameras, one for black-and-white imaging at a two-meter ground resolution, one for colour imaging at eight-meter resolution and one for wide-angle colour imaging at a 16-meter GSD. It is intended as a replacement for the first Gaofen satellite launched in 2013.

On the 1st & 2nd Comet 46P Wirtanen will just 2 degrees from the 4.4 magnitude star Tau Eridani in the constellation of Eridanus. Its location at 11:30pm is approximately 12 degrees above the horizon in the SSW. It was at 6.5 magnitude on 14th November. For further information please see the "Comet Section" in the website above.

On the 1st at 7:00am the 1st magnitude star Spica in Virgo is 6 degrees to the right of Venus in the SE.

At 7:00am on the 2nd the 2.7 magnitude star Porrima is just 1½ degrees below the Moon.

There is a scheduled launch on the 3rd* at 11:31am* from the Baikonur Cosmodrome, Kazakhstan. NASA astronaut Anne McClain, Canadian Space Agency astronaut David Saint-Jacques and Oleg Kononenko of the Russian Space Agency Roscosmos are the next crew to launch to the International Space Station (ISS). See News Extra below.

On the 3rd at 6:00am in the SE the Moon will be approx midway between Zeta Virginis (3.3 Mag) and Spica in Virgo with Venus 8 degrees below left of the Moon.

On the 3rd & 4th at 7:00am Comet C/2018 L2 Atlas will be just 2½ degrees from the 2nd magnitude star Rasalhague in Ophiuchus. On the 2nd it was at perihelion (1.712AU) and a distance 2.424AU from Earth. It was at 10th*** magnitude on the 6th November. For further information please see the "Comet Section" in the website above.

From the 3rd – 8th Mars will be passing close to the star Lambda Aquarii and the planet Neptune. At 6:00pm on the 4th the star Lambda Aquarii will be just ¾ of a degree above right of Mars in the south. At 6:00pm on the 7th Mars and the Neptune will be just a small fraction of a degree apart.

There is a scheduled launch on the 4th* at 6:38pm* from Cape Canaveral, Florida. An uncrewed SpaceX Dragon cargo spacecraft will lift off on a Falcon 9 rocket from Launch Complex 40. It will deliver supplies and equipment to the ISS.

At 6:00am on the 4th Venus is 6 degrees to the above right of the crescent Moon.

On the 5th at 7:00am Mercury is 4 degrees above the horizon and 7½ degrees below left of the crescent Moon.

At 7:30am on the 6th a thin crescent Moon is 5½ degrees above the SE horizon with Jupiter 4 degrees below it and Mercury 6 degrees above right of the Moon.

On the 8th at 4:30pm a very thin crescent Moon will be 4½ degrees above the horizon in the SW with Saturn 7 degrees above left of the Moon. The 3.8 magnitude star Mu Sagittarii in Sagittarius is 1.8 degrees above left of the Moon.

An occultation of Saturn by the Moon occurs on the 9th at 5:00am over central Siberia.

At 5:00pm on the 9th low in the SW a thin crescent Moon will be 6½ degrees above the horizon with Saturn 5½ degrees to the lower right of it. The 2.8 magnitude star Pi Sagittarii in Sagittarius is 2¼ degrees to the upper left of the Moon.

Around the 10th Comet 64P Swift-Gehrels will be within the constellation of Triangulum and at a distance 0.571AU from the Earth. On the 14th November it was at 9th magnitude. For further information please see the “Comet Section” in the website above.

At 5:30pm on the 11th the asteroid Vesta is 3 degrees to the lower right of the Moon. For further information please see “Asteroid” section in the website above.

Comet C/2018 V1 Machholz-Fujikawa-Iwamoto is at perihelion (closest to the Sun in its orbit) 0.387 AU on Dec 12th.

Comet 46P Wirtanen is at perihelion on the 12th. At a distance 1.055AU from the Sun.

On the 12th at 6:00pm the star Phi Aquarii (4.2 Mag) in Aquarius is a ¼ of a degree below Mars.

An occultation of Pluto by the Moon occurs on the 12th at 4:00am over Siberia, Japan and most of China.

Around 8:30pm on the 12th as the Moon approaches the horizon in WSW, the 3.6 magnitude star Nashira in Capricornus is less than ½ a degree above the Moon.

On the 13th at 9:00pm Mars will be 16 degrees above left of the Moon in the south west, with Neptune just 4 degrees below right of Mars.

From the 14th - 17th Comet 46P Wirtanen will be at its closest to the Earth at a distance of 0.078AU (7,254,000 miles). It is in the constellation of Taurus. It was at 6.5 magnitude on 14th November. For further information please see the “Comet Section” in the website above.

Comet 38P/Stephan-Oterma was at perihelion on the 10th November. Its closest to Earth from the 14th - 19th December when it is at 0.766AU (71.238 million miles). Its in the constellation Lynx which is to the left Castor and Pollux in Gemini. It was at 10th magnitude on the 14th November. For further information please see the “Comet Section” in the website above.

At 10:00pm on the 14th Mars will be 4½ degrees above right of the Moon in the WSW. Neptune is just 4 degrees to the right of the Moon.

The Geminids meteor shower reaches its peak on the 14th at 10:30am, so the best viewing period maybe before dawn.

Mercury is at maximum western elongation from the Sun on the 15th.

On the 15th at 6:30pm the Moon will be due South with Mars 8½ degrees to the right of it.

A 10:00pm on the 17th the Moon will be in the south west with Uranus 7½ degrees directly above it. The 4.2 magnitude star Omicron is 1½ degrees below Uranus.

On the 18th at 9:45pm Uranus is 8 degrees to the right of the Moon. The 4.3 magnitude star Xi Ceti 11484 is just 1 degree left of the Moon and by midnight they will be less than ¼ degree apart.

At midnight on the 19th the 3.7 magnitude star Xi Tauri in Taurus is just 3½ degrees to the lower left of the Moon.

On the 20th* the astronauts Serena Auñón-Chancellor, Alexander Gerst and cosmonaut Sergey Prokopyev will undock their Soyuz spacecraft from the International Space Station (ISS) and land in Kazakhstan.

From the 20th - 22nd Mercury and Jupiter will be passing very close to each other. On the 21st low in the south east and just a few degrees above the horizon, Mercury is 1 degree above Jupiter.

On the 20th at midnight the 3.6 magnitude star Gamma Tauri in Taurus is 1¼ degrees to the lower right of the Moon.

Just before 6:00am on the 21st low in the WNW the Moon will be 2 degrees above the horizon with Aldebaran (0.8 Mag) 1½ degrees to the left of it.

On the 22nd at 6:30am the Moon is 7½ degrees above the horizon and due WNW with the 2.9 magnitude star Zeta Tauri in Taurus just 2 degrees above it.

Venus is a just under 3 degrees and above left of the star Zubenelgenubi (2.7 Mag) in Libra on the 22nd.

At midnight on the 22nd the 2.8 magnitude star Mu Geminorum is 2 degrees upper left of the Moon.

The Ursids meteor shower reaches its peak at 6:00am on the 23rd.

At 6:00am on the 23rd the 4.1 magnitude star Nu Geminorum is 1 degree below the Moon in the west.

On the 23rd at 10:00pm the 3.5 magnitude star Wasat in Gemini is just 1¼ degrees to the upper left of the Moon.

The Comae Berenicids meteor shower reaches its peak between 4:00 – 5:00am on the 26th.

Venus is at perihelion (closest to the Sun in its orbit) on the 26th.

At 7:00am on the 26th the bright star Regulus in Leo will be just 6¾ degrees to the left of the Moon.

On the 27th at 6:00am the asteroid Ceres is approximately 3 degrees to the upper left of Venus in the direction of the 2.6 magnitude star Zubeneschamali in Libra.

At 7:15am on the 29th the star Porrima in Virgo is just 4 degrees to the lower left of the Moon.

On the 30th at 6:20am in the south the asteroid Pallas will be 2½ degrees below the Moon.

On the 30th at 7:00am Jupiter is due south east and 7½ degrees above the horizon.

If any of you are up on the morning of the 1st January at 7:00am you will see the Moon in the SSE with Venus 7 degrees to the lower left of it and Jupiter 6 degrees above the horizon in the south east.

* = Dates and times are subject to change.

Facts: Yuri Gagarin (b.1934) became the first man in space in April 1961. He entered into an apprenticeship at the age of 16 as a foundryman at the Lyubertsy Steel Plant near Moscow. After graduating from both the seventh grade and vocational school with honours in moldmaking and foundry work, he was selected for further training at the Saratov Industrial Technical School, where he studied tractors. At a local flying club in Saratov he learned to fly a biplane and a Yak-18 trainer.

News Extra: Anne McClain (b.1979) was born and raised in Spokane, Washington. She graduated from the United States Military Academy, where she earned a bachelor's degree in mechanical engineering. McClain then came to England where she attended the University of Bath where she earned a master's degree in aerospace engineering, and the University of Bristol where she earned a master's degree in international security. McClain is also an avid rugby player and plays at a competitive level. Her army commitments thwarted her international career and prevented her participation in the 2006 Women's Rugby World Cup. In June 2013 she was selected by NASA as part of Astronaut Group 21, becoming the youngest astronaut on the NASA roster.

David Saint-Jacques (b.1970) was born and raised in Quebec. He is married and has three children. He began his career as a biomedical engineer at the Quebec firm Electromed. His studies also included theoretical work on astronomical observation and design, fabrication and commissioning of instruments for the Cambridge Optical Aperture Synthesis Telescope and for the William Herschel Telescope in the Canary Islands. He was selected in May 2009 by the Canadian Space Agency.

Oleg Kononenko (b.1964) is married and have a son and daughter. In March 1996 he was selected as a cosmonaut candidate. His first mission to the ISS was as a flight engineer that was launched in April 2008. In his previous three missions to the ISS he has spent a total of 533 days in space.